

REMARKS

The present application has been reviewed in light of the Office Action dated March 18, 2003. Claims 1-56 are presented for examination, of which Claims 1 and 17 are in independent form. Claims 1-35 and 36-56 have been amended to define Applicant's invention more clearly. Favorable reconsideration is requested.

As an initial matter, an Information Disclosure Statement has been submitted herewith, citing Japanese document JPA 10-271146 and providing an English translation thereof.

The Office Action indicates that the drawings are objected to, for the reasons set forth in section 2. Submitted herewith is a Request For Approval Of Drawing Changes, which proposes to amend the drawings to overcome the noted objections. Applicant submits that the requested changes add no new matter to the disclosure.

The Office Action indicates that the specification and the abstract are objected to for certain informalities identified in sections 3 and 5. Applicant submits that the specification and the abstract, as amended by the present Amendment, corrects the noted informalities.

The Office Action indicates that Claims 1, 6, 17, 22, and 30 are objected to, for the reasons set forth in section 6. Applicant submits that those claims, as amended by the present Amendment, overcomes the noted objections.

The Office Action states that Claims 1, 3, 13, 17, 31, and 35 are rejected under 35 U.S.C. § 112, ¶ 2, as being indefinite. Applicant has carefully reviewed and amended those claims, as deemed necessary, with special attention to the points raised in section 8. Applicant submits that the amended claims are sufficiently definite. Accordingly, withdrawal of the

rejections under § 112, ¶ 2, is respectfully requested.

The Office Action states that Claims 1, 2, 17, and 18 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,324,178 (Lo et al.); that Claims 3-16, 19-36, and 54-56 are rejected under § 103(a) as being unpatentable over Lo et al. in view of U.S. Patent No. 6,233,611 (Ludtke et al.); and that Claims 37-53 are rejected under § 103(a) as being unpatentable over Lo et al. in view of Ludtke et al., and further in view of U.S. Patent No. 6,064,772 (Tanno et al.).

Applicant submits that independent Claims 1 and 17, together with the claims dependent thereon, are patentably distinct from Lo et al. for at least the following reasons.

An aspect of the present invention set forth in Claim 1 is directed to a method of communicating digital information of different data formats via a plurality of communication channels shared between several communication means. The method includes a reception operation, a reformat operation, and a transmission operation. In the reception operation, digital information having a first format and transmitted via a first communication channel from communication means that uses the first format is received. In the reformat operation, the received digital information having the first format is reformatted to digital information having a second format different from the first format, if resources to use a second channel for transmission of digital information having the second format are available. In the transmission operation, the digital information having the second format is transmitted via the second channel and is received by communication means that uses the second format.

One of the features of Claim 1 is that the digital information having the first

format and transmitted via the first channel is reformatted from the first format to digital information having the second format, which is different from the first format, if the necessary resources to use the second channel for transmission of digital information having the second format are available. Support for this feature is set forth in the specification at, for example, page 19, line 15, to page 20, line 18. The reformatted digital information is transmitted via the second channel to a peripheral device, for example, which uses the second format.

Lo et al. discloses a data transfer method between communication domains of different packet formats. The method is purported to eliminate the need to copy a data payload section 324 of a received data packet from one memory space to another memory space within a bridge device coupled between first and second communication domains. As mentioned at column 5, lines 24-25, the second communication domain is generally different from the first communication domain.

Lo et al. also discloses, with reference to the algorithm in Figure 5, that a new header section 330 of a data packet is constructed within the data packet format of the second communication domain by a bridge circuit 220, when the data packet is to be transferred from the first to the second communication domain. (See column 8, lines 44-46, and column 9, line 10-14.)

Also, a new data packet for the second communication domain is assembled, including the new header 330, and an appended pointer 332, which references the unchanged data payload section 324.

Nothing has been found in Lo et al. that is believed to teach or suggest a

method of communicating digital information that includes "a reception operation of receiving digital information having a first format, transmitted via a first communication channel from communication means that uses the first format," and "a reformat operation of reformatting the received digital information having the first format to digital information having a second format different from the first format, if resources to use a second channel for transmission of digital information having the second format are available," and "a transmission operation of transmitting the digital information having the second format via the second channel, wherein the digital information having the second format and transmitted via the second channel is received by communication means that uses the second format," as recited in Claim 1.

As understood by Applicant, the change to the data packet as taught by Lo et al. does not take into account the availability of resources in the second communication domain. Thus, the only format conversion that occurs is that of the header section, with the payload section not undergoing reformatting. That is, Lo et al. is aimed at transferring the same data payload with a different protocol, e.g. IEEE 1394 and Ethernet (see column 8, lines 12 and 46). Therefore, under these circumstances, resources are not an issue, because two different communication domains are involved, which means there is no sharing of resources. Also, the size of the data payload remains constant during its transfer from one domain to another.

Further, as specified at column 9, lines 18-25, of Lo et al., after assembling a new data packet, data within the data payload section 324 is automatically accessed and broadcast over a second communication bus 250. This is understood to mean that the availability of resources in the second communication domain is not taken into account for the transfer of

data.

In contrast, according to the method of Claim 1, digital information, i.e., a data payload, is reformatted to a second format from a first format. The reformatting operation may increase the need for resources in a second communication channel. Consequently, the reformatting operation is performed if resources to use the second communication channel for transmission of the digital information having the second format are available. Lo et al. is believed to be silent regarding such a feature.

Accordingly, Applicant submits that Claim 1 is not anticipated by Lo et al., and respectfully requests withdrawal of the rejection under 35 U.S.C. § 102(e). Independent Claim 17 includes a feature similar to that discussed above, in which reformatting takes into account the availability of resources to use a communication channel. Therefore, Claim 17 also is believed to be patentable for at least the same reasons as discussed above.

Ludtke et al. discloses a system that includes a data format manager that manages the format of data flowing between devices. In the event that a source device and a destination device involve different data types, the system will handle automatic or requested data translation using the data format manager (see column 10, lines 61-66).

For example, the system analyzes the input data formats for source and destination nodes in order to determine whether a conversion is necessary (see column 11, lines 49-51). Ludtke et al. is understood to teach that a conversion is performed when two communicating nodes use different formats.

Nothing has been found in Ludtke et al. that is believed to remedy the

deficiencies of Lo et al. That is, there is no disclosure in Ludtke et al. of performing a reformatting of digital information in accordance with an availability of resources to use a communication channel for transmission of the reformatted digital information.

Tanno et al. also fails to remedy the deficiencies of Lo et al.

JPA 10-271146 discloses that DV-formatted data transmitted from a device A via a network bus 2 is converted to MPEG2-formatted data by a device C, and the MPEG2-formatted data is transmitted to a device B via the network bus 2. However, this reference also fails to teach or suggest a reformatting operation that takes into consideration the availability of resources to use a communication channel for transmission of reformatted digital information.

Accordingly, Applicant submits that independent Claims 1 and 17 are patentable over Lo et al., Ludtke et al., Tanno et al., and JPA 10-271146, considered individually or in combination.

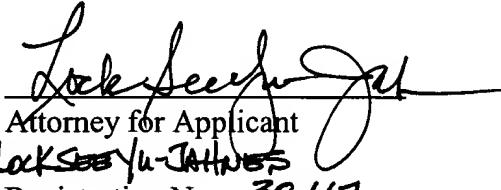
The other rejected claims in this application depend from either Claim 1 or Claim 17 and, therefore, are submitted to be patentable for at least the reasons discussed above. Since each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

CONCLUSION

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

  
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Attorney for Applicant  
Lockheed, Inc.  
Registration No. 38,667

FITZPATRICK, CELLA, HARPER & SCINTO  
30 Rockefeller Plaza  
New York, New York 10112-3801  
Facsimile: (212) 218-2200

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